Brown Patch Suppression on Golf Course Fairways

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OBJECTIVE

To determine the efficacy of standard and experimental fungicides for the control of brown patch caused by the fungus *Rhizoctonia solani*.

MATERIALS AND METHODS

The study was conducted at the O. J. Noer Turfgrass Research and Education Facility on a stand of colonial bentgrass (*Agrostis capillaris*) maintained at 0.5 inches. The individual plots measured 3 feet by 10 feet and were arranged in a randomized complete block design with four replications. Individual treatments were applied at a nozzle pressure of 40 p.s.i. using a CO_2 pressurized boom sprayer equipped with two XR Teejet AI8004 nozzles. All fungicides were agitated by hand and applied in the equivalent of 2 gallons of water per 1000 $ft^{2.}$ All treatments were initiated June 12th, 2014 and subsequent applications were made at 14 day intervals. Plots were covered with a tent to promote brown patch infection and inoculated with *R. solani*-infested rye grain on August 15th. Brown patch severity and turf quality (1-9, 9 being excellent and 6 acceptable) were visually assessed and subjected to an analysis of variance and means were separated using the Waller-Duncan test (P = 0.05). Results of the disease severity and turfgrass quality ratings can be found in table 1 and 2, respectively.

RESULTS AND DISCUSSION

Despite attempts to increase brown patch severity, consistently cool and dry conditions prevented significant brown patch from developing until the end of August. Even then, brown patch severity in the non-treated controls only reached 27.5% and all fungicide treatments provided excellent brown patch suppression. All treatments provided acceptable turfgrass quality, and those containing the pigment Foursome provided a significantly darker green color turfgrass. Phytotoxicity was not observed with any treatment.

Table 1. Mean brown patch severity per treatment on colonial bentgrass maintained at fairway height at the OJ Noer Turfgrass Research Facility in Madison, WI during 2014.

	Treatment	Rate	Application Interval	Brown Patch Severity[a]		
				Jun 20	Jul 21	Aug 25
1	Non-treated control			0.0a	0.0a	27.5a
2	Isofetamid IB10354	0.2 FL OZ/1000 FT2 3.2 FL OZ/1000 FT2	14 Day	0.0a	0.0a	0.0b
3	Isofetamid IB10354	0.3 FL OZ/1000 FT2 3.2 FL OZ/1000 FT2	14 Day	0.0a	0.0a	5.0b
4	Isofetamid IB10354	0.4 FL OZ/1000 FT2 3.2 FL OZ/1000 FT2	14 Day	0.0a	0.0a	7.5b
5	QP Strobe 50 WG Foursome	0.2 OZ 1000/FT2 0.4 FL OZ/1000 FT2	14 Day	0.0a	0.0a	0.0b
6	Heritage Foursome	0.2 OZ/1000 FT2 0.4 FL OZ/1000 FT2	14 Day	0.0a	0.0a	1.3b
7	QP Fosetyl Al QP Chlorothalonil DF Foursome	4.0 OZ/1000 FT2 3.23 OZ/1000 FT2 0.4 FL OZ/1000 FT2	14 Day	0.0a	0.0a	1.3b
8	Chipco Signature Daconil Ultrex	4.0 OZ/1000 FT2 3.23 OZ/1000 FT2	14 Day	0.0a	0.0a	1.3b
9	QP Enclave Foursome	3.0 FL OZ/1000 FT2 0.4 FL OZ/1000 FT2	14 Day	0.0a	0.0a	3.8b

[a]Brown patch severity was visually assessed as percent disease. Means followed by the same letter do not significantly differ (P=.05, Waller-Duncan).

Table 2. Mean turfgrass quality per treatment on colonial bentgrass maintained at fairway height at the OJ Noer Turfgrass Research Facility in Madison, WI during 2014.

	Treatment	Rate	Application Interval	Turfgrass Quality[a]		
				Jun 20	Jul 21	Aug 25
1	Non-treated control			7.0a	7.0a	4.3b
2	Isofetamid IB10354	0.2 FL OZ/1000 FT2 3.2 FL OZ/1000 FT2	14 Day	7.0a	7.0a	7.0a
3	Isofetamid IB10354	0.3 FL OZ/1000 FT2 3.2 FL OZ/1000 FT2	14 Day	7.0a	7.0a	6.3a
4	Isofetamid IB10354	0.4 FL OZ/1000 FT2 3.2 FL OZ/1000 FT2	14 Day	7.0a	7.0a	6.0a
5	QP Strobe 50 WG Foursome	0.2 OZ 1000/FT2 0.4 FL OZ/1000 FT2	14 Day	7.0a	7.0a	7.5a
6	Heritage Foursome	0.2 OZ/1000 FT2 0.4 FL OZ/1000 FT2	14 Day	7.0a	7.0a	7.3a
7	QP Fosetyl Al QP Chlorothalonil DF Foursome	4.0 OZ/1000 FT2 3.23 OZ/1000 FT2 0.4 FL OZ/1000 FT2	14 Day	7.0a	7.0a	7.5a
8	Chipco Signature Daconil Ultrex	4.0 OZ/1000 FT2 3.23 OZ/1000 FT2	14 Day	7.0a	7.0a	6.8a
9	QP Enclave Foursome	3.0 FL OZ/1000 FT2 0.4 FL OZ/1000 FT2	14 Day	7.0a	7.0a	7.0a

[a]Turfgrass quality was rated visually on a 1 – 9 scale with 6 being acceptable. Means followed by the same letter do not significantly differ (P=.05, Waller Duncan).